



R.Bassii

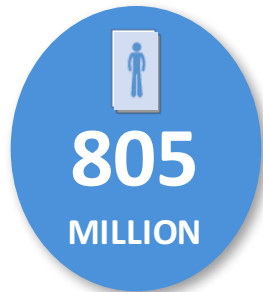
Ecologia alimentare ed etica del consumo

Casa Artusi – 30 giugno 2016

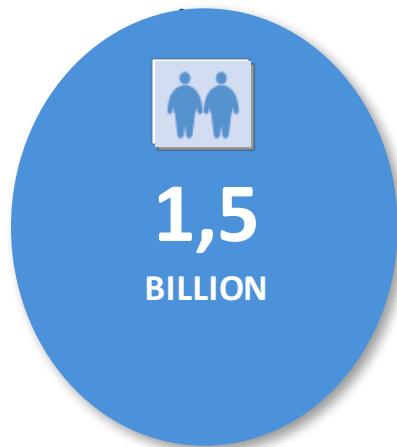
Barilla
The Italian Food Company. Since 1877.

THE GLOBAL PARADOXES ON FOOD AND NUTRITION

DIE OF HUNGER
OR OBESITY?



VS



FEED PEOPLE,
ANIMALS
OR CARS?

WORLD GRAIN PRODUCTION
AND ITS USE



47%
Human food

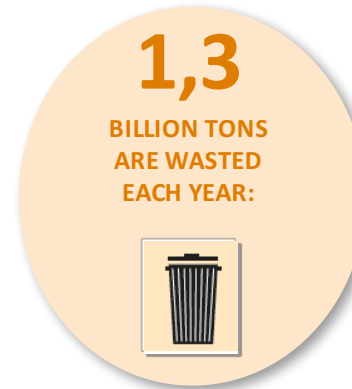


33%
Animal fodder



7%
Biofuels

FEED WASTE
OR FEED THE
HUNGRY?



=



4 TIMES
WHAT IT WOULD TAKE
TO FEED
THE 805 MILLION PEOPLE
WHO ARE HUNGRY

THE PLANET'S BALANCE IS NEGATIVE!



Good for You, Good for the Planet

1

Taste, Quality and Safety

Simple products...enjoyable and safe experience

2

Balanced Nutrition

Nutritionally correct food model...balanced diet

3

Sustainable Life Cycle

Product lifecycle that is respectful...

4

Correct Lifestyle

Correct Information...Food Education

5

Local Communities

Needs and rights of local communities...promoting diversities

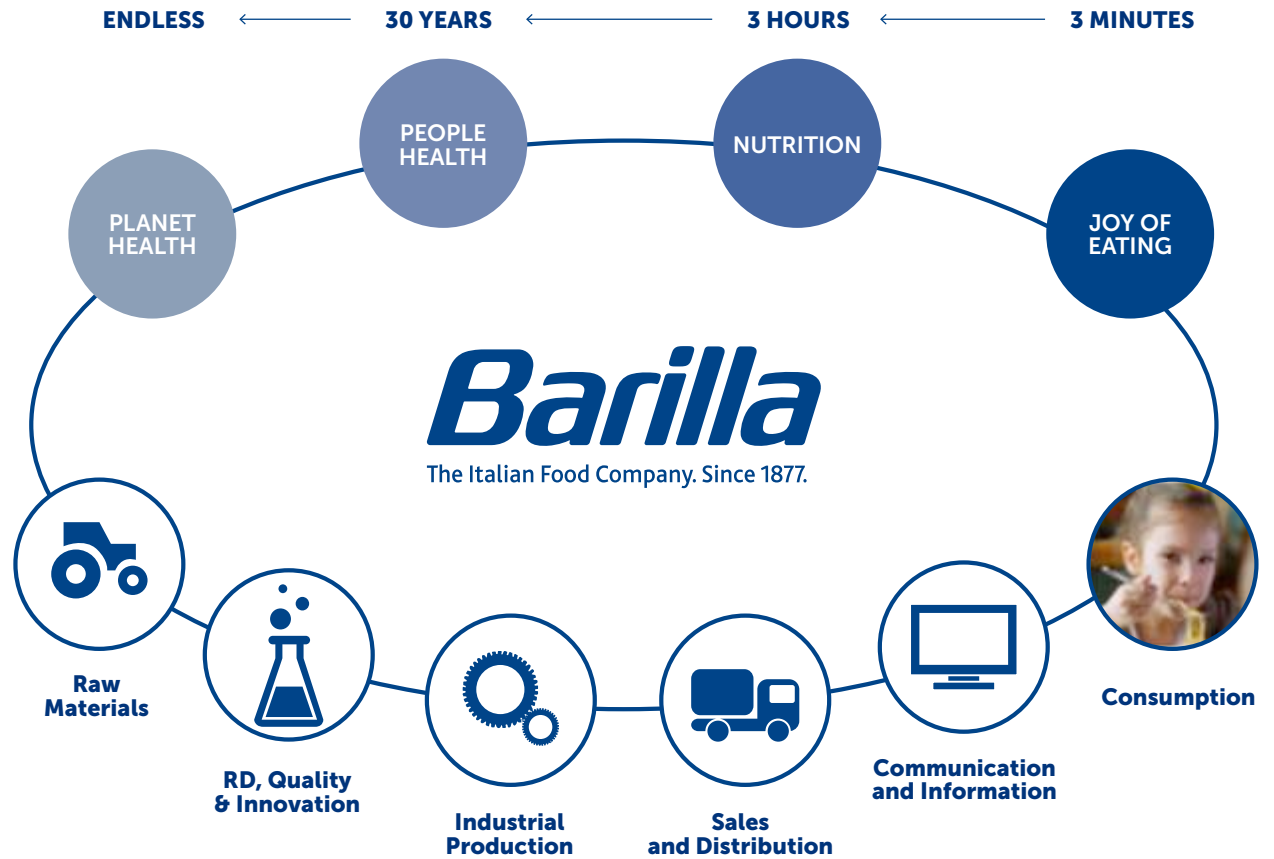
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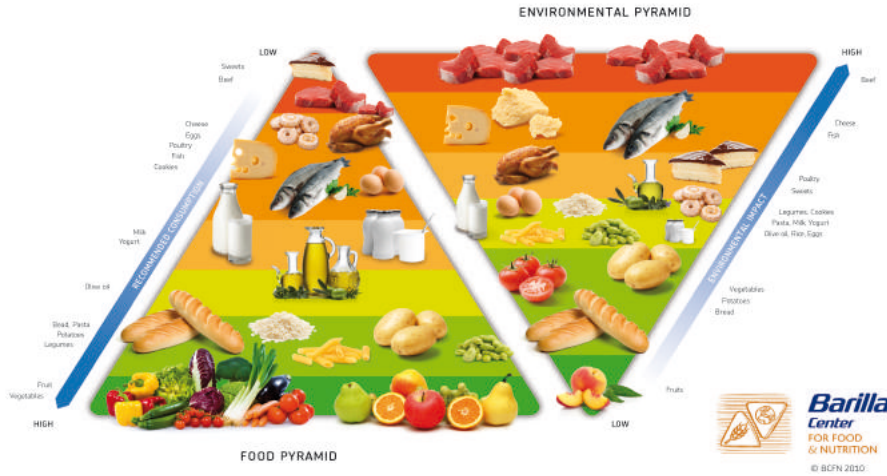
Barilla People

Ambassadors of Barilla's identity, values and food culture



From Field to People



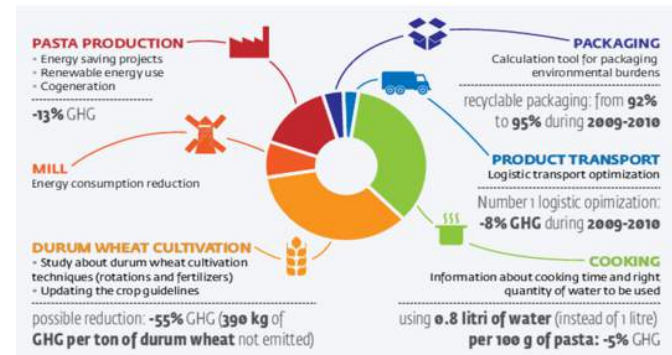


Barilla EPD Process System

BCFN, Sustainable Diets and Life Cycle Assessment

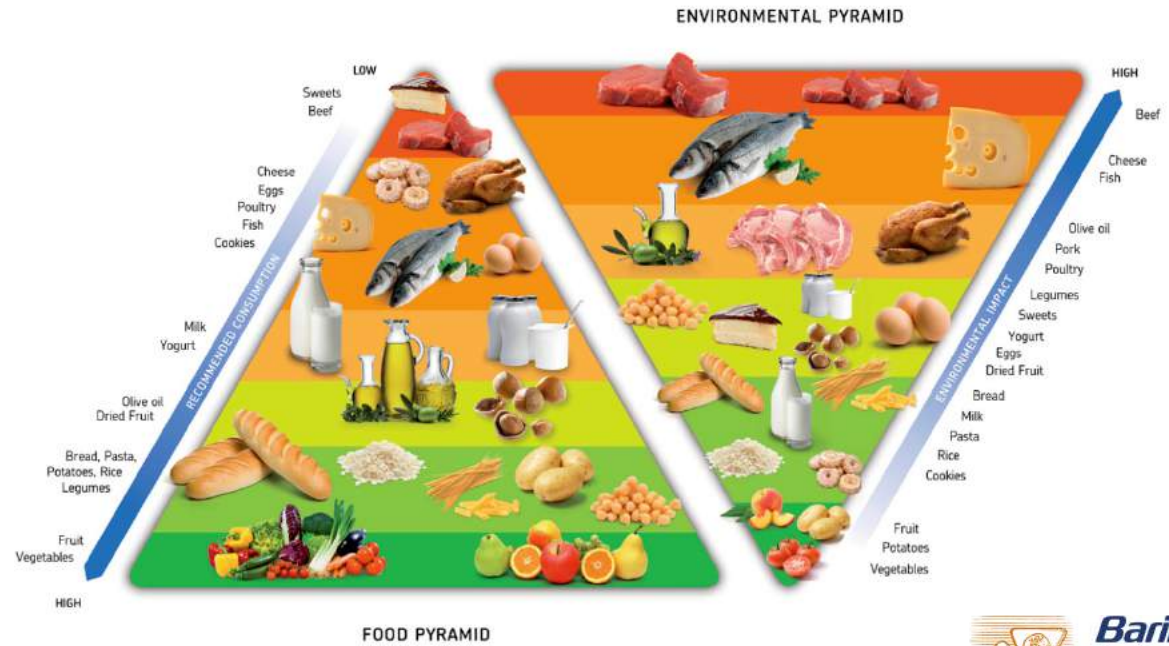


Supply Chain High quality durum wheat cultivation project



- 1 BCFN & Double Pyramid
- 2 Life Cycle Assessment
- 3 Barilla EPD Process System
- 4 Sustainable High Quality Durum Wheat Cultivation Project

The Double Pyramid: a Model of Reference



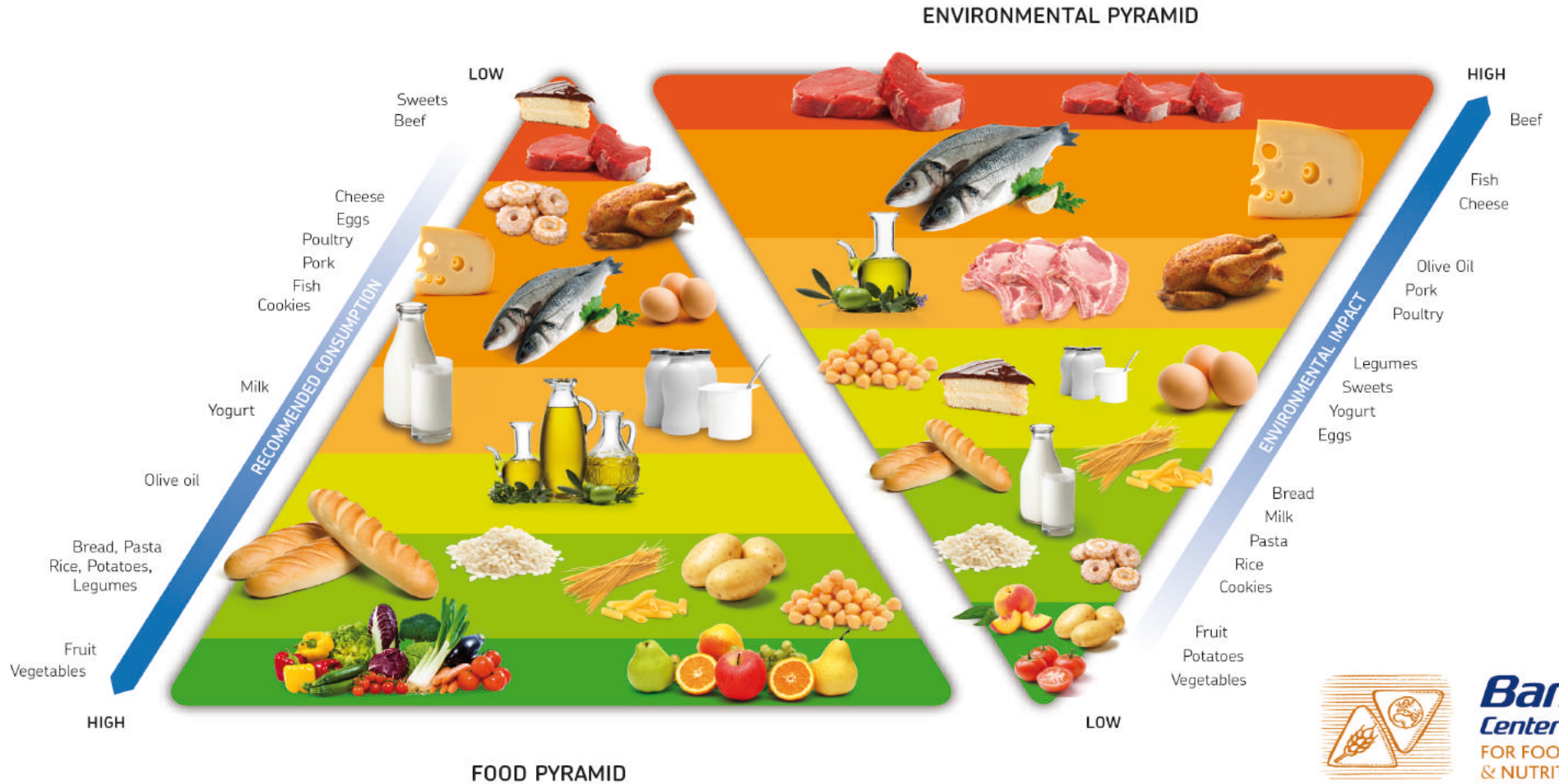
© BCFN 2013

- The Double Pyramid has been developed by the **Barilla Center for Food and Nutrition**, Barilla's think tank, in 2009.
- The Double Pyramid shows how food for which consumption is recommended more frequently is also the one that best preserves the health of our Planet.



2014 BCFN Double Pyramid for ADULTS

THE DOUBLE PYRAMID FOR ADULTS



Barilla Center
FOR FOOD & NUTRITION

© BCFN 2011

Barilla
The Italian Food Company. Since 1877.

BCFN Double Pyramid Papers

A Sustainable Diet Proposal in line with the Mediterranean Diet
Today is available on line the DP 5th Edition



2011 Double Pyramid:
Healthy food for people,
sustainable for the planet



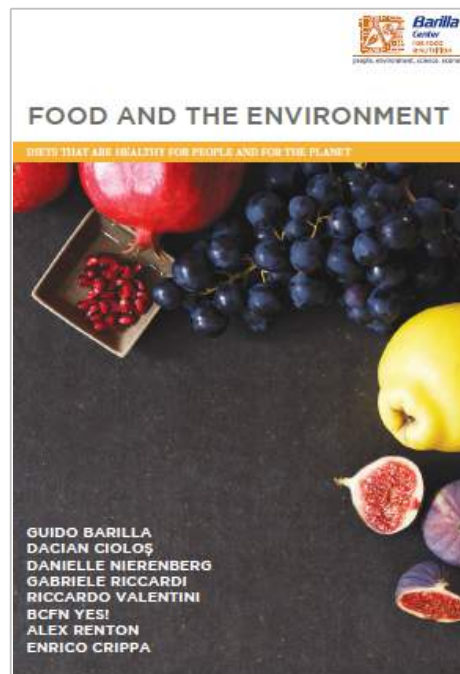
2011



Double Pyramid 2012:
enabling sustainable
food choices

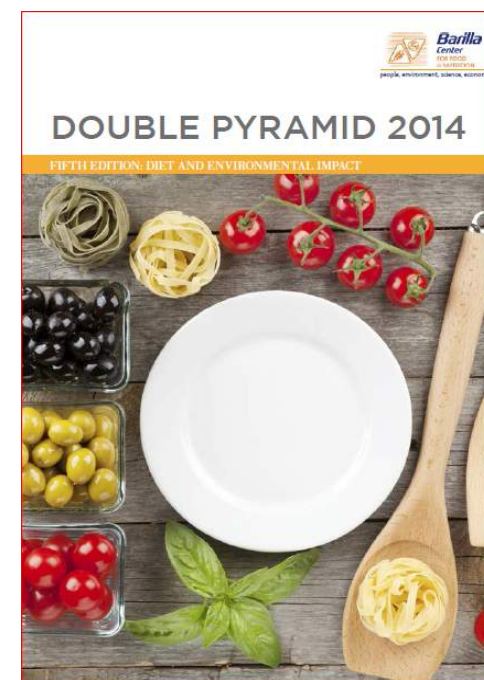


2012



GUIDO BARILLA
DACIAN CIOLOS
DANIELLE NIERENBERG
GABRIELE RICCARDI
RICCARDO VALENTINI
BCFN YES!
ALEX RENTON
ENRICO CRIPPA

2013



2014
San Francisco

Life Cycle Assessment



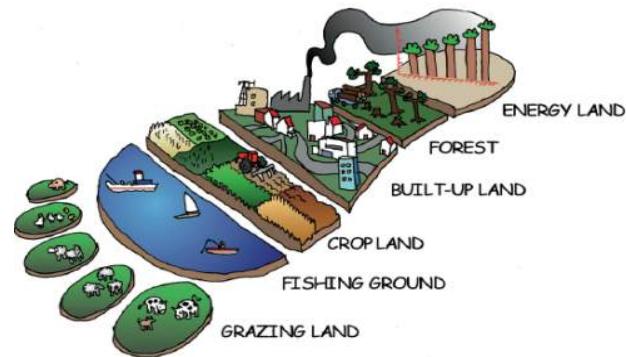
Footprints



Carbon Footprint
gCO₂-eq per kg or Litre of food

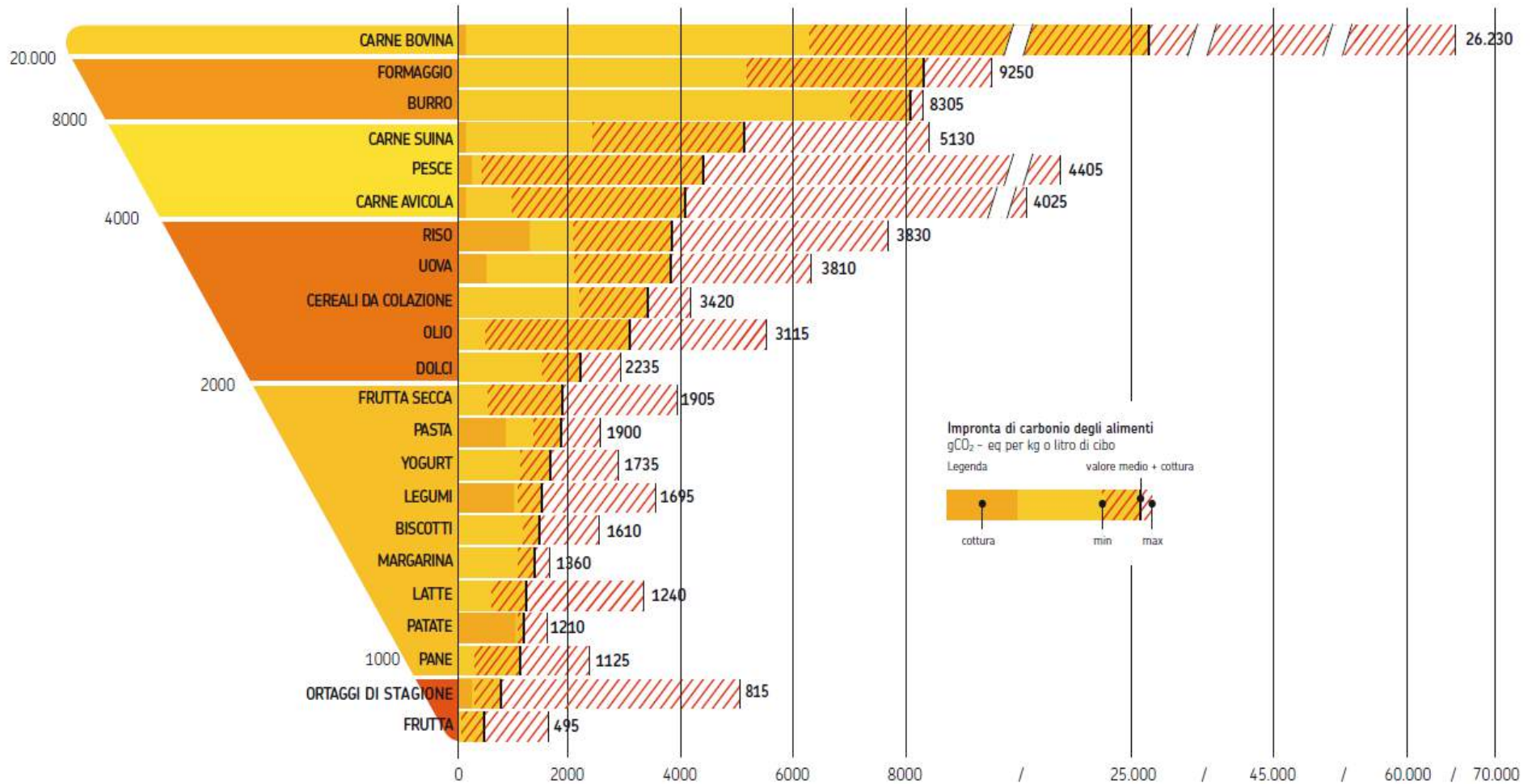


Water Footprint
Litre per kg or Litre of food

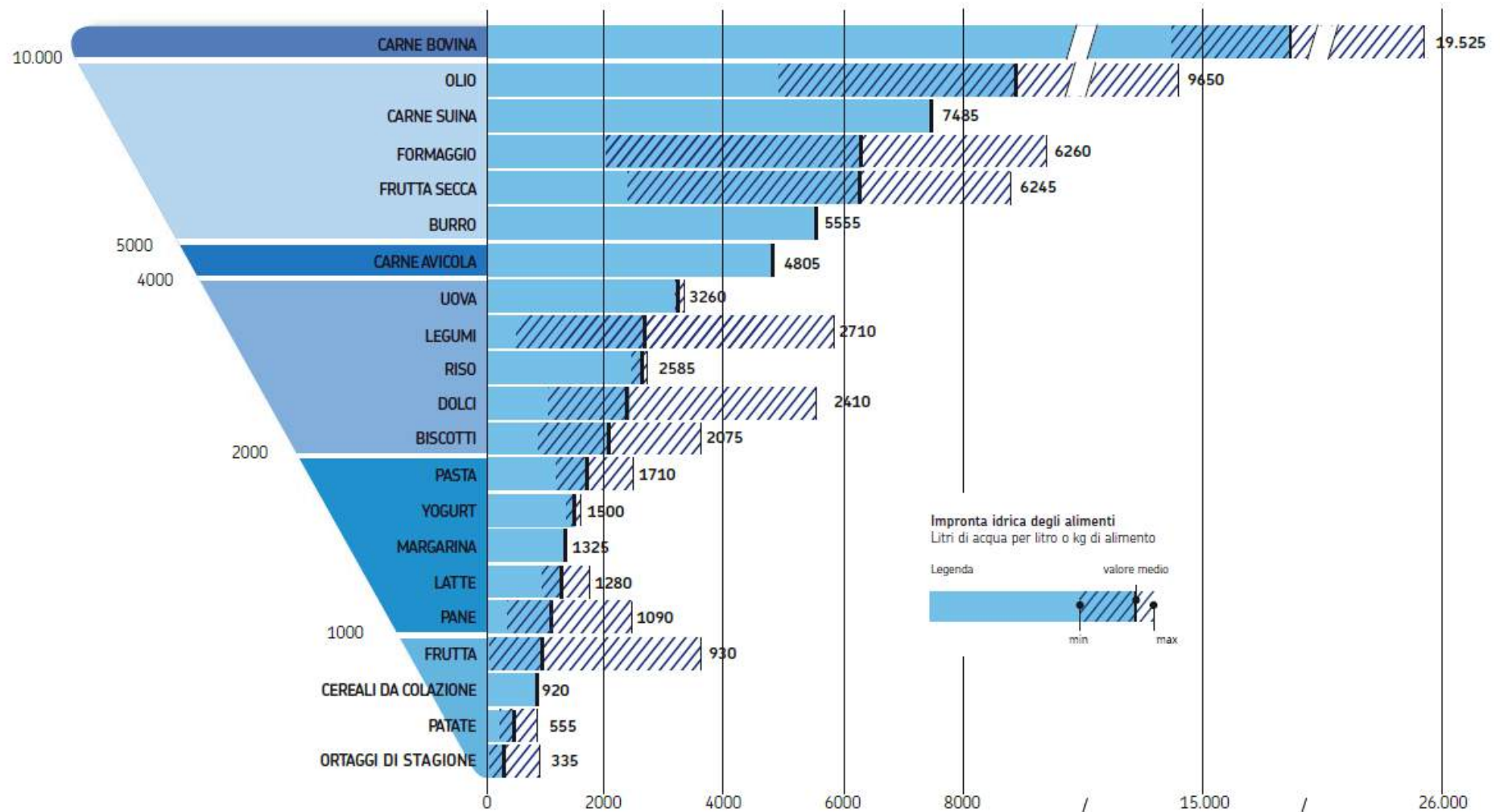


Ecological Footprint
Global m² per kg or Litre of food

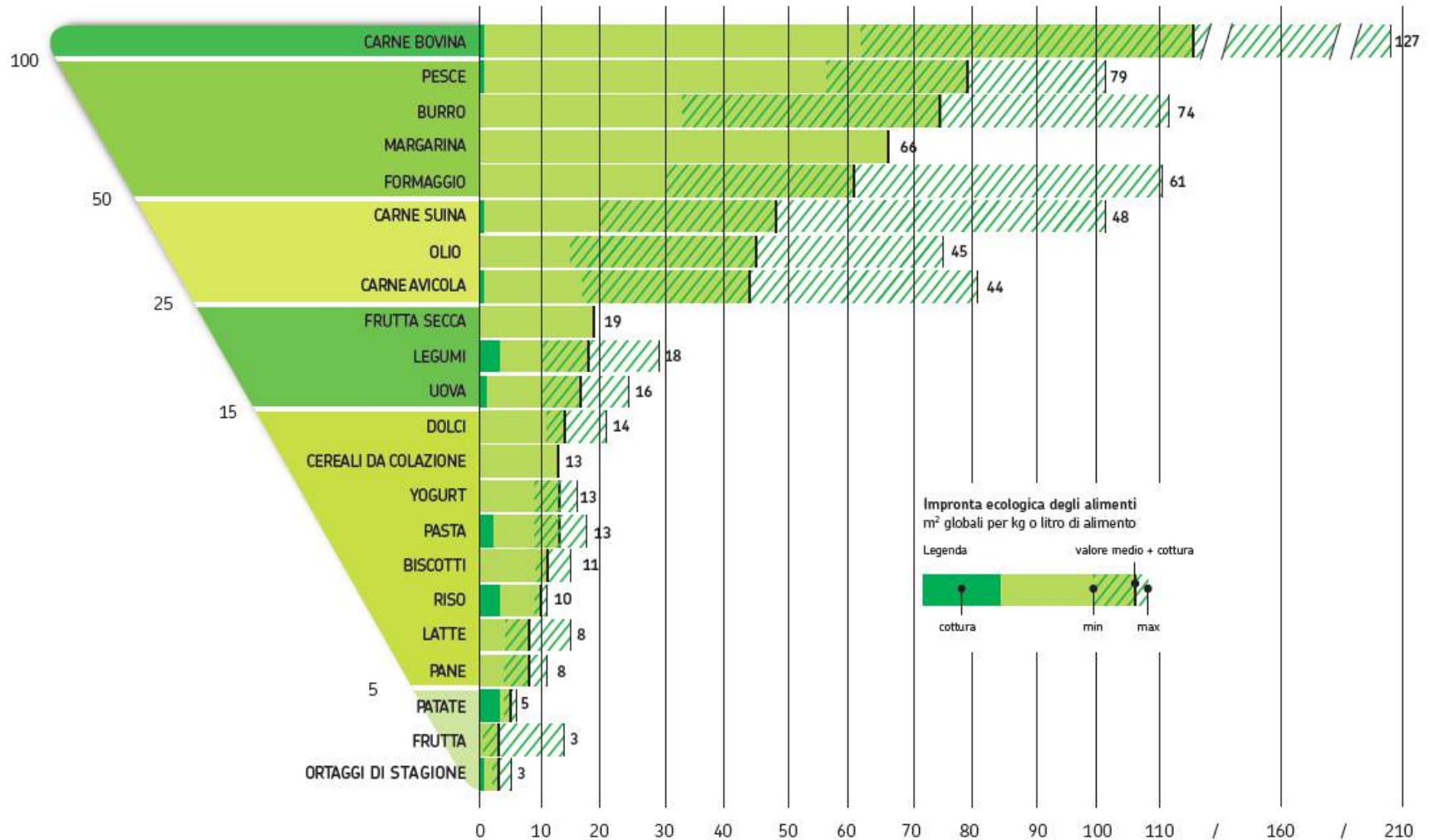
Environmental Pyramid : Carbon Footprint



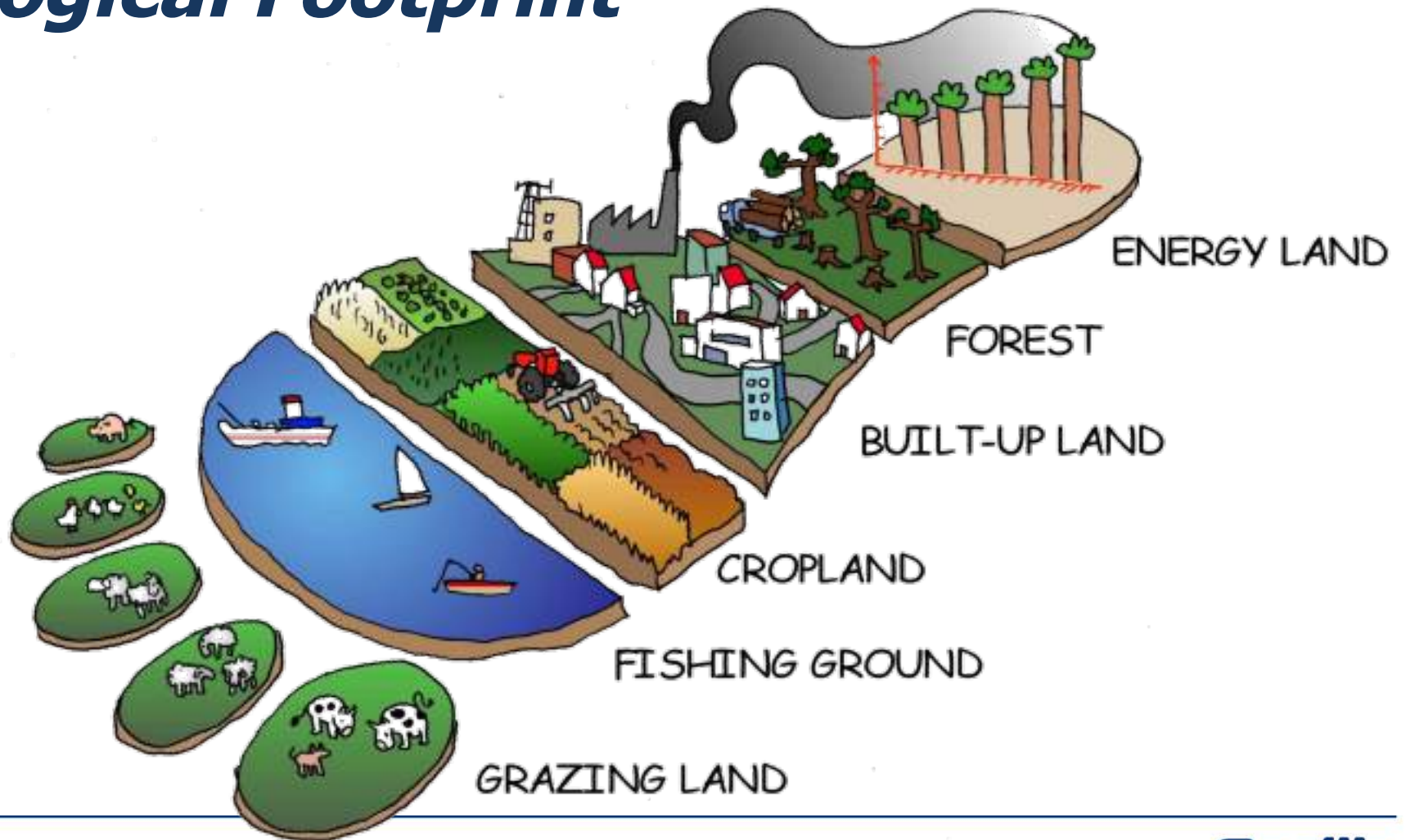
Environmental Pyramid: Water Footprint



Environmental Pyramid : Ecological Footprint



Ecological Footprint



Barilla has developed a Tool that allows to calculate the **nutritional effects** of the most popular foods (in terms of carbohydrates, proteins, calories and fats) and their impacts in terms of the main **environmental indicators**.

The Tool Chef was made for Barilla Chefs and has been used to calculate the environmental impact of all the dishes daily served in the canteens within **Sì.Mediterraneo Project**.

Today the Tool includes about **1500** recipes



GARGANELLI CON VERDURE FRESCHE

Difficoltà: ★★☆☆☆ Facile Informazioni: ⌚ 45' 00 🍴 400 g

VALORI NUTRIZIONALI PER PORZIONE				
Calorie(kcal)	Carboidrati(g)	Proteine(g)	Grassi(g)	Fibre(g)
267*	57	9	1	10

IMPATTI AMBIENTALI PER PORZIONE			
	CF [gCO ₂ eq]	EF [gGlobalw ⁺]	WF [litri]
Ingredienti	184	2	2
Cottura	150	-	-
TOTALE	334	2	2

INGREDIENTI PER PORZIONE:
Garganelli Barilla 300 g, broccoli 200 g, zucchine 200 g, cime di rapa 200g, olio extra vergine di oliva 40g, porro 30g, filetti di acciuga sott'olio 10g, aglio 3g, sale 2g, pepe bianco 0,5g.

Preparazione:
Lavare le cime di rapa; separare le cime dei broccoli. Tagliare le zucchine a julienne fine. In una padella antiaderente insaporire 2 cucchiai di olio con lo spicchio d'aglio sbucciato e il porro tagliato a fettine. Scioglierli i filetti di acciuga e scottare velocemente le cime di rapa. Frullare il tutto in un mixer, aggiungendo se necessario un po' di acqua bollente. Dosare di pepe e sale e tenere da parte. Cuocere i Garganelli, scolarli al dente e saltarli in padella con le verdure, mantecando con la crema di cime di rapa. A piacere aggiungere lamelle di Pecorino stagionato.

LA PIRAMIDE FINANCE PER SUDICI



Sciegliere ogni giorno un'alimentazione equilibrata dal punto di vista nutrizionale è importante per la nostra salute, ma anche per la salvaguardia dell'ambiente. La doppia piramide, qui rappresentata in termini di valori nutrizionali e di Ecological Footprint, mostra come gli alimenti per i quali è raccomandato un consumo più frequente sono anche quelli con un minor impatto ambientale.

Carbon Footprint (CF): quantità totale di gas serra emessi direttamente e indirettamente dalle attività antropiche lungo tutto il ciclo di vita (g CO₂ equivalente).

Ecological Footprint (EF): misura di quanti appezzamenti di terreno o mari biologicamente produttivi sono necessari per rigenerare le risorse consumate e per assorbire i rifiuti prodotti lungo tutto il ciclo di vita (global m²).

Water Footprint (WF): consumo di acqua in termini di volumi utilizzati (evaporati) e/o inquinati, espresso in termini di volume di acqua per unità di prodotto o come volume di acqua per unità di tempo, lungo tutto il ciclo di vita (litri).

* X % del fabbisogno calorico medio giornaliero che, per un adulto normopeso e moderatamente attivo, è pari a 2000 kcal.
* Il colore della piramide rievoca l'associazione al piatto, si riferisce alla sua posizione in termini di Ecological Footprint (EF) nella piramide ambientale.

IL RISPETTO PER L'AMBIENTE INIZIA A TAVOLA.

MONDAY

Breakfast

- 1 Glass of semi-skimmed milk
- 5 Mulino Bianco "Armonie Dorate" rusks
- 1 Piece of fruit

Snack

- 1 "Storie di Frutta Mulino Bianco (apple, banana, pear)" fruit smoothie

Lunch

- 1 Portion of "Barilla Whole-Grain" spaghetti, cheese and pepper with herbs
- 1 Portion of rabbit with olives
 - Mixed raw vegetables
 - Bread (60g)

Snack

- 1 Piece of fruit
- 1 Packet of "Sfoglia di Grano" Mulino Bianco unsalted crackers

Dinner

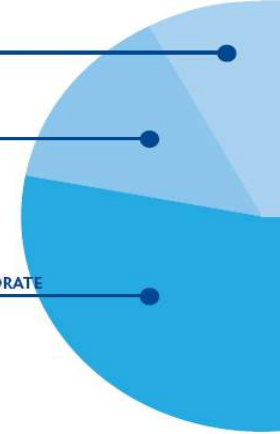
- 1 Portion of tomato smoothie
- 1 Portion of herb omelette
 - Steamed chard (200g) and potatoes (300g)
 - Whole Grain bread (60g)

Total kcal: 2.270

PROTEIN
16%

FAT
28%

CARBOHYDRATE
56%



ECOLOGICAL FOOTPRINT: 21 m²



ECOLOGICAL FOOTPRINT: 1 m²



ECOLOGICAL FOOTPRINT: 10 m²



LCA Chef Tool developed > 1.000 recipes

GARGANELLI CON VERDURE FRESCHE

INGREDIENTI:

Garganelli Barilla 300g, broccoli 200 g, zucchine 200 g, cime di rapa 200g, olio extravergine di oliva 40g, pane 20g, fuffi di cocco 50ml olio 10g, aglio 3g, sale 7g, pepe bianco 0.5g.

Difficoltà:	Informazioni:
★ ★ ★ ★ Facile	🕒 45' 00
	🍴 400 g

	OPACCO (ml)	EFFICACIA (ml)	WATER (ml)
Ingrédients	188	3	2
Celulas	150		
TOTALIE	338	3	2

	Calorici (kcal)	Carboidrati (g)	Proteine (g)	Grassi (g)	fibre (g)
Ingredienti	267	57	9	11	19

Preparazione:

Lavare le cime di rapa, separare la cima dei broccoli, tagliare le zucchine a julienne fine, in una padella antiaderente incorporare 2 cucchiai di olio con la spicchio d'aglio sbucciato e il porro tagliato a fettine. Soffriggere i fuffi di cocco e scottare velocemente le cime di rapa. Filtrare il tutto in un mixer, aggiungendo se necessario un po' di acqua bollente. Dosare di pepe e sale o tenere da parte.

Cucinare i Garganelli, scolarli al dente e adrirli in padella con le verdure, mantecandoli con la crema di cima di rapa. A piacere aggiungere fette di Peccotto stagionato.

LA PIU' GRANDE PIATTAFORMA DI RICETTE

PIATTAFORMA DI RICETTE

Scoprire ogni giorno un'insolita ricetta realizzata dal punto di vista nutrizionale e ambientale per la salute delle persone e per la salvaguardia dell'ambiente. La ricetta è pensata per essere facilmente riproducibile con gli ingredienti che si trovano più facilmente in cucina, senza mai un solo ingrediente esotico.

Carbon Footprint quanto tempo di gas serra emesse direttamente o indirettamente dalle attività produttive lungo tutto il ciclo di vita (la CO₂ equivalente).

Water Footprint consumo di acqua in termini di volume (litri) necessari allo sviluppo, spesso in termini di volume di acqua per unità di prodotto o come volume di acqua per unità di tempo, lungo tutto il ciclo di vita (litri).

Ecological footprint misura di quanti ettari di terreno e mare sono necessari per produrre il cibo che consumiamo e per smaltire i rifiuti prodotti lungo tutto il ciclo di vita (globali).

vivi con Barilla la dieta mediterranea

TUESDAY

Lunch

- 1 Portion of Barilla "Penne Rigate" with tomato and basil
- 1 Portion of salmon with artichoke purée
 - Mixed raw vegetables
 - Whole Grain bread (60g)

ECOLOGICAL FOOTPRINT: 15 m²



Snack

- 4 Chocolate biscuits
- 1 "Storie di Frutta Mulino Bianco (peach, grapes, apricot)" fruit smoothie

ECOLOGICAL FOOTPRINT: 3 m²



Dinner

- 1 Portion of Barilla "Ditaloni Lisci" with beans
- Mixed raw vegetables
- 2 "Pan Bauletto" Mulino Bianco soft wheat bread slices
- 1 Portion of strawberries with lemon

ECOLOGICAL FOOTPRINT: 8 m²

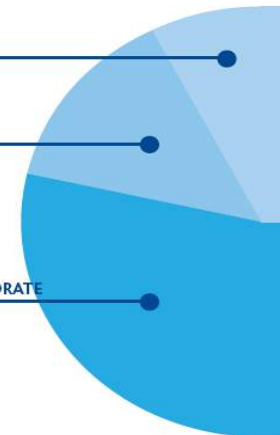


Total kcal: 2.230

PROTEIN
15%

FAT
26%

CARBOHYDRATE
59%

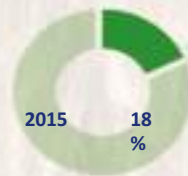


SUPPLY CHAIN

By 2020 Barilla is committed to buying 100% of the strategic raw materials in a responsible way



6 %



18 %

2020



100%

CEREALS

Publish a **Sustainable Agriculture Code** by 2016.

Identify the **most efficient sustainable cultivation systems** in all the countries.

TOMATO

Use **local supplies**.
Work together with **local producers**.

VEGETABLE OILS

Use exclusively **palm oil RSPO** certified.
Use only **sun flower oil** from supply chains with environmental sustainability high standards.

EGGS

Procurement only from supply chains that adhere to **Barilla Guidelines on Animal Welfare**.

COCOA

Use only **monitored cocoa supply chains**.

SUGAR

Encourage wheat rotation projects in the **sugar beet** supply chains.
Sustainable procurement of **sugar cane**.



Since 2010 Barilla has been working on a multidisciplinary study which aims to identify **the best sustainable farming system** applicable to the Italian Durum Wheat production land.



Results

Emissions reduction	- 210 kg CO ₂ eq/t
Yields increase	+ 20%



80%

Italian Durum Wheat used in the production of Barilla Pasta Italy.



Sustainable High Quality Durum Wheat Cultivation Project

Sustainable Durum Wheat Cultivation

AIM OF THE PROJECT ABOUT DURUM WHEAT PROJECT

- 1) **Identify** in the different area **sustainable alternative cropping systems** for the cultivation of durum wheat;
- 2) **Analyze** and evaluate the characteristics of cropping systems identified;
- 3) **Validate** the alternative cropping systems with **in-field experimentations**
- 4) Integrate the Barilla's Cultivation Disciplinary (**Decalogue**)
- 5) Use a web based Farmers **Decision Supporting System (DSS)**



Durum wheat cultivation

INDICATORS USED

- **CARBON FOOTPRINT:** it represents the total amount of greenhouse gases (GHG) produced to directly and indirectly support human activities, usually expressed in equivalent tons of CO₂ with the relative indicator, commonly called “global warming potential”.
- **WATER FOOTPRINT:** it measures the water consumption of a system in terms of water volumes consumed because of the processes, the irrigation, the natural evaporation by plants and/or that polluted, per unit of time.
- **ECOLOGICAL FOOTPRINT:** is a measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. It is measured in global hectares (gha).
- **ECONOMICS INDICATORS:** represented by the direct costs of cultivation (cultivation operations + technical tools), the gross marketable production (GPS), updated to the price lists of 17 November 2009, and the gross income (GI), i.e. the difference between direct costs of cultivation and GPS. (In the GPS are not considered coupled and uncoupled aid)
- **NITROGEN INDEX:** measurement of nitrogen availability determined by the previous crop residue, by the contribution of chemical fertilizers and the time required to biologically degrade the organic substance of the preceding crop;
- **DON INDEX:** this index expresses the cultivation safety aspects related to the possibility of reducing pathology occurrence due to the deoxynivalenol mycotoxin (DON).

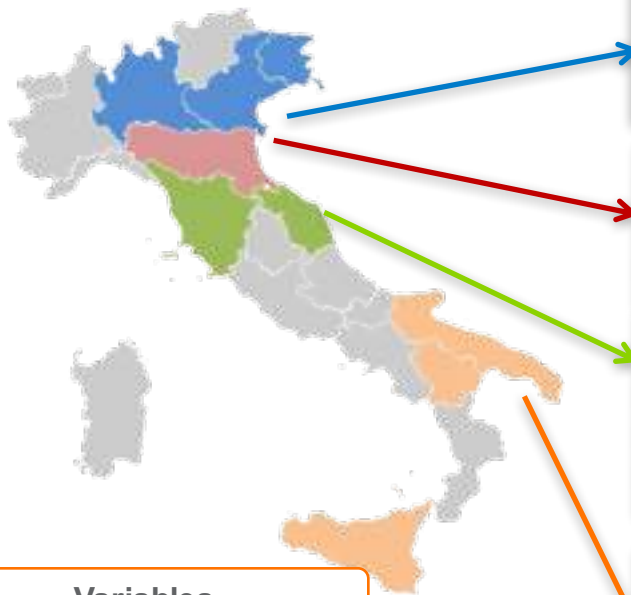


Durum wheat cultivation



CROP SYSTEM ANALYSIS

Crop System analysed



Lombardia, Veneto and Friuli (PLV)	Cultivation
Maize	Maize (3 years) – Durum wheat
Diversified	Soybean – Durum wheat – Millet - Maize

Emilia Romagna (RER)	Cultivation
Cereals	Maize – Durum wheat – Millet - Wheat
Industrial	Soybean – Durum wheat- Maize – Wheat
Horticultural	Tomato – Durum wheat - Maize – Wheat

Marche and Toscana	Cultivation
Cereals	Durum wheat (3 years)– Millet
Proteic	Proteic pea (2 years)- Durum wheat (2 years)
Alfa alfa	Alfa alfa (3 years) – Durum wheat
Industrial	Rapeseed – Durum wheat – Sunflower – Durum wheat

Puglia, Basilicata and Sicilia	Cultivation
One crop	Durum wheat (4 years)
Fodder	Durum wheat (2 years)– Oat and vetch (2 years)
Horticultural	Tomato – Durum wheat - Tomato – Durum wheat
Check pea	Chick pea (2 years)– Durum wheat (2 years)

Variables

- Crop system: species used within the crop rotations
- Agricultural “in-field” activities
- Fertilizers use
- Regional climatic situation

System Boundaries

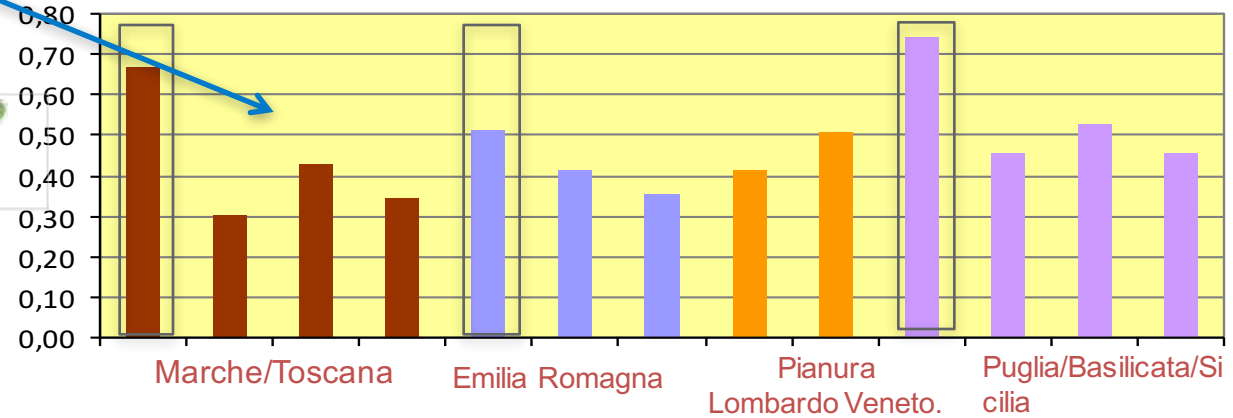


Sustainable Durum wheat cultivation

- 390 kg Co2 / t



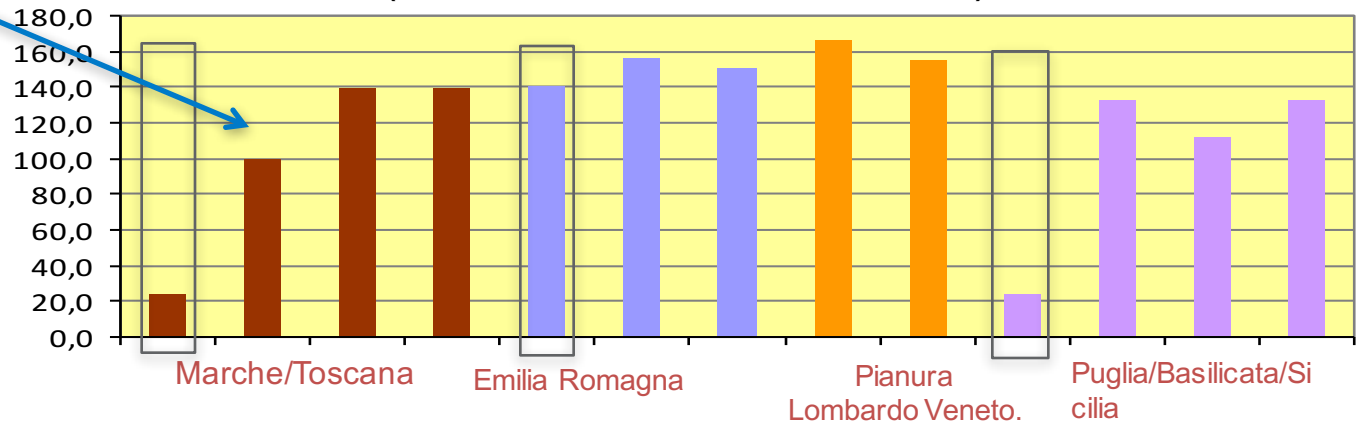
Carbon Footprint (t Co2 / t durum wheat semolina)



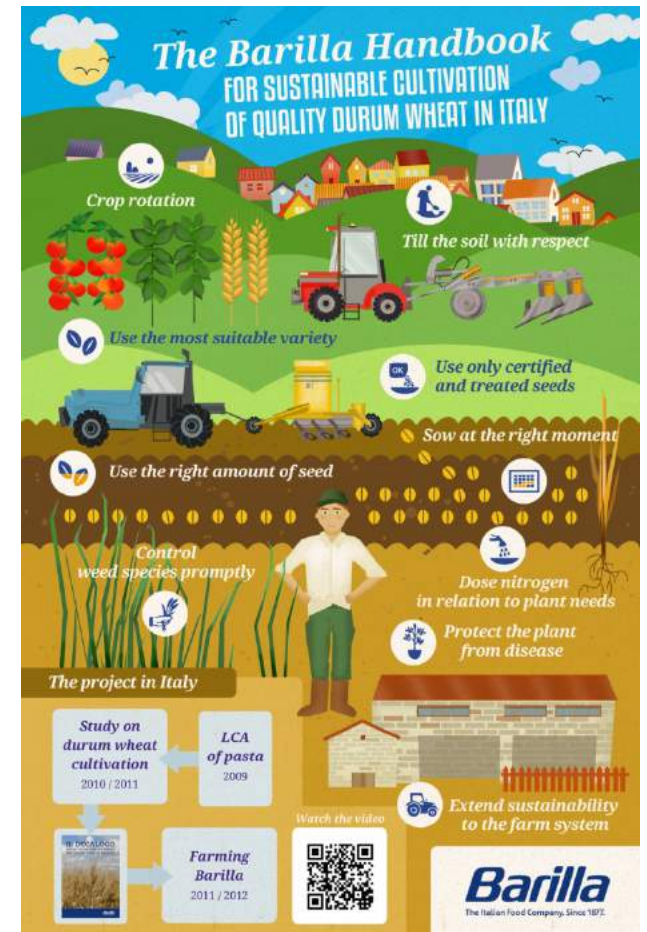
> 100 € / t



Net Income (€ / t durum wheat semolina)



Italian Farmers Handbook



Adopting **old-well known** (but not still applied)
agricultural practice
is **good for farmers, soil & environment !**

HANDBOOK FOR SUSTAINABLE CULTIVATION OF QUALITY DURUM WHEAT

The **Handbook for durum wheat cultivation** comes from the results of the pasta EPD study. The handbook is a list of guiding principles for farmers choices, into the complex challenge of modern agriculture.

OBJECTIVE APPLICATION 10 RULES

DON reduction (Food Safety)



Yield increase and quality improvement



Environmental impact reduction



European CSR Award Ceremony

25 JUNE 2013 • WILD GALLERY • BRUSSELS



Durum wheat cultivation

Second Part of the Project

“Durum wheat: Cropping System Sustainability in Italy 2011-2012”

The second part of the project consists in in-field experimentation, comparing sustainable and traditional cropping systems.

Now we are in the go-live phase

2011-12: In-field testing with >25 farmers

2013-14: Go-live year: >80.000 t 16.000 ha

2015: 140.000 t



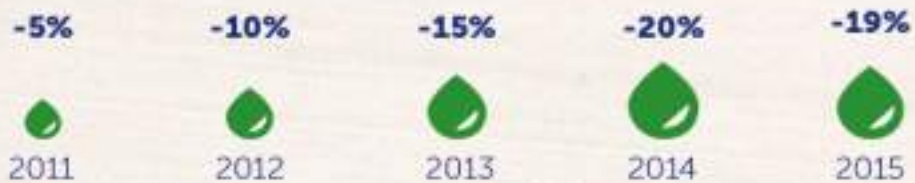
ENVIRONMENT

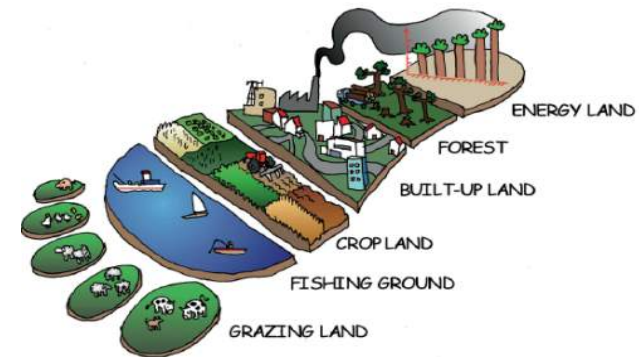
Reduce greenhouse gas emissions and water consumption
in production processes

CO₂ EMISSIONS REDUCTION SINCE 2010



WATER CONSUMPTION REDUCTION SINCE 2010





Barilla Packaging Waste Labeling system

Paper



Metal



Glass



Plastic



Not YET recyclable!



- Barilla Group is the **first company in the food field** to have set up an internal system for the environmental impact calculation of products and for the environmental declaration publication, following the **International EPD[®] System** requirements.

The system has been certified by **Bureau Veritas**, which periodically verifies its compliances.



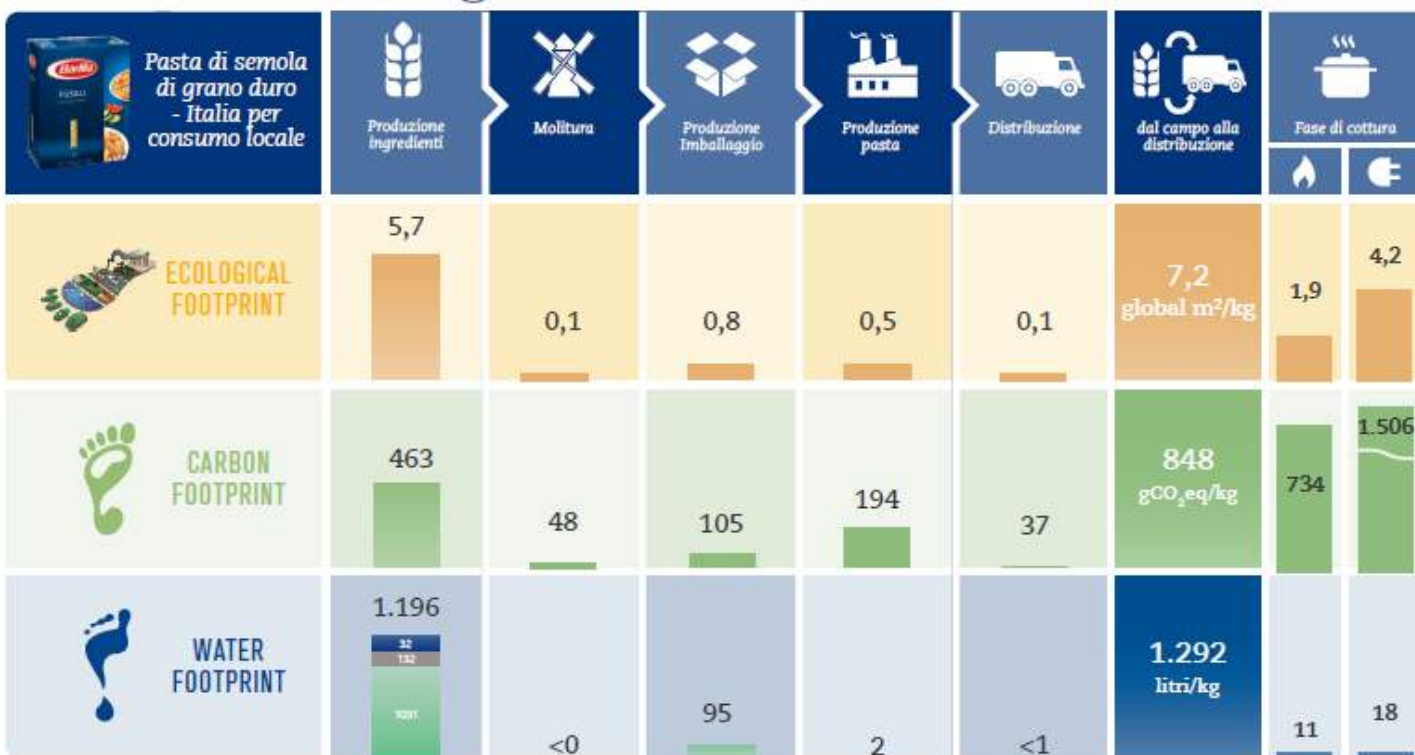
- EPD* example: **durum wheat semolina dried Pasta Barilla** in paperboard box, **500 g**



EPD Pasta



PERFORMANCE AMBIENTALI DEL PRODOTTO





Pasta di Semola di grano duro

confezionata in astuccio di cartoncino

Environmental Product Declaration



DATA CPC: 11/2024
 TIPOLOGIA: pasta di semola di grano duro duro

DATA DI APPROVAZIONE: 18/11/2024 - Versione 3.0.0

ISO SCOPPO: 4 - 30000000

NUMERO DI REGISTRAZIONE: 1-2-2017



Barilla ha progettato il primo sistema EPD certificato in pasta di semola di grano duro

Barilla takes care of product **packaging** not only in the paper, cardboard and **flexible film** purchases but also by trying to **improve** the product packs that have been developed over the years.



A project which aims to **improve environmental performances** has started also for Food Service Pasta:



Multilayer Flexible Film (**LDPE**)
usage for 5kg Food Service Pasta

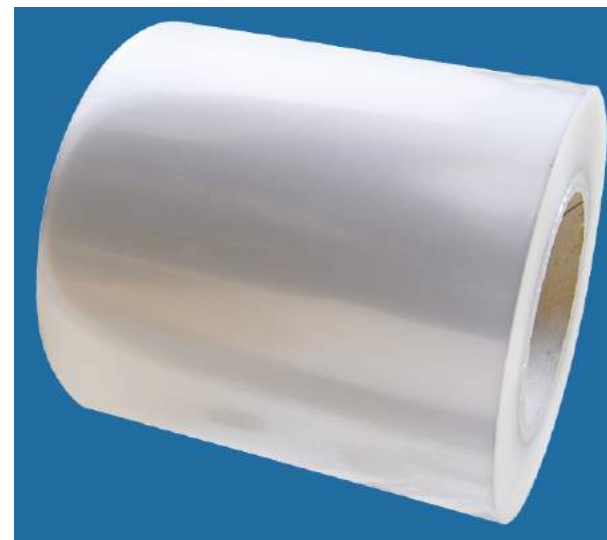
**Transition from 50 µm to
35 µm**



Barilla FoodService produces about 10 Mio packages of 5kg Semolina Pasta in one year (assumption: 9,847,680* units) of about 15 different typologies and 36 references. The mass of LDPE film saved for a single packaging varies from 5.2 g to 13.2 g.

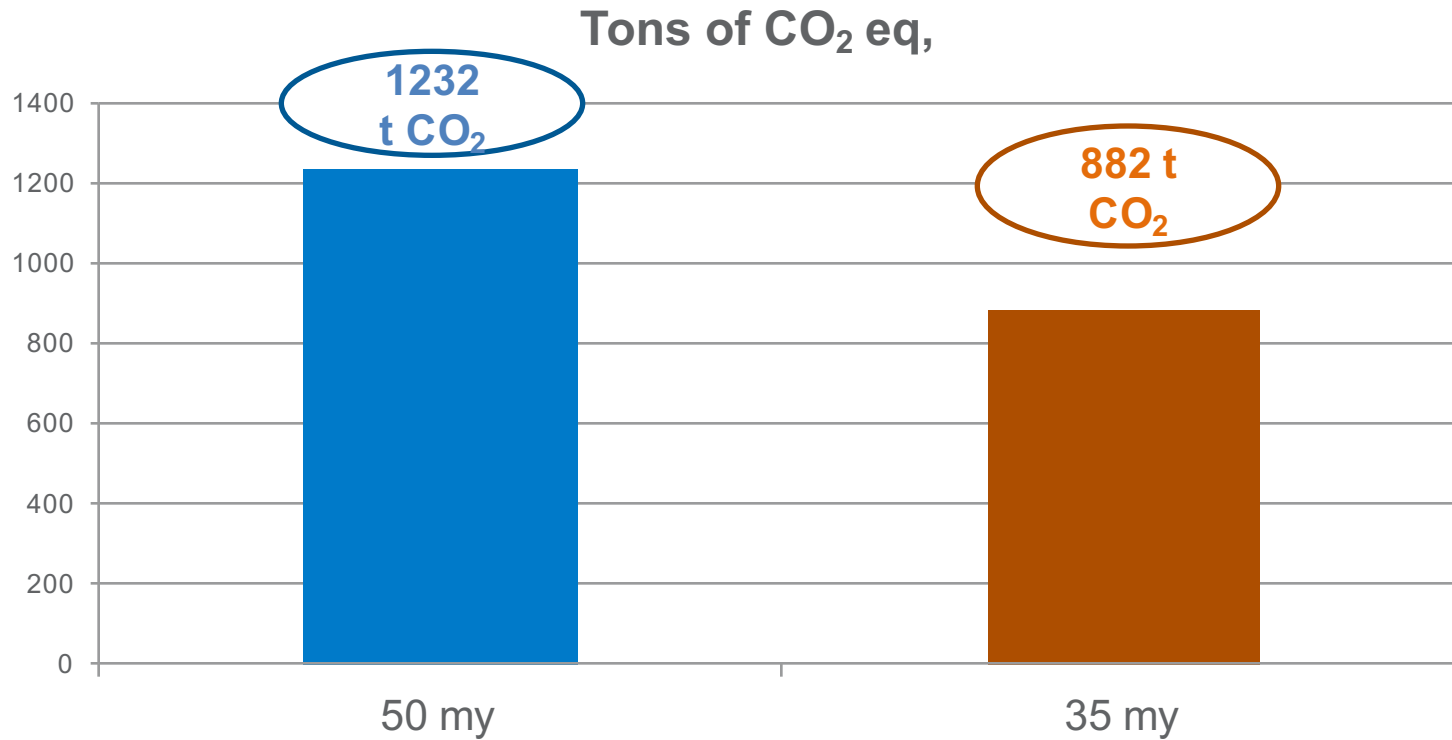
Consequently the yearly LDPE film save is equal to: **100 tons**

The indicated tons are referred to saved LDPE quantity through the transition from LDPE Coex 50 μm film to LDPE Coex 35 μm film.



* Source: yearly exstimation on Barilla internal data

Results of the reduction of LDPE film



Emissions reduction (CO₂ eq)	350	tons
Which corresponds to:	About 50 laps of the Equator by car	



sì.mediterraneo

vivi con Barilla la dieta mediterranea

sì mediterraneo

vivi con Barilla la dieta mediterranea



Barilla
The Italian Food Company. Since 1877.

**MEDITERRANEAN DIET HAS
BEEN RECOGNIZED BY
UNESCO AS INTANGIBLE
CULTURAL HERITAGE OF
HUMANITY**



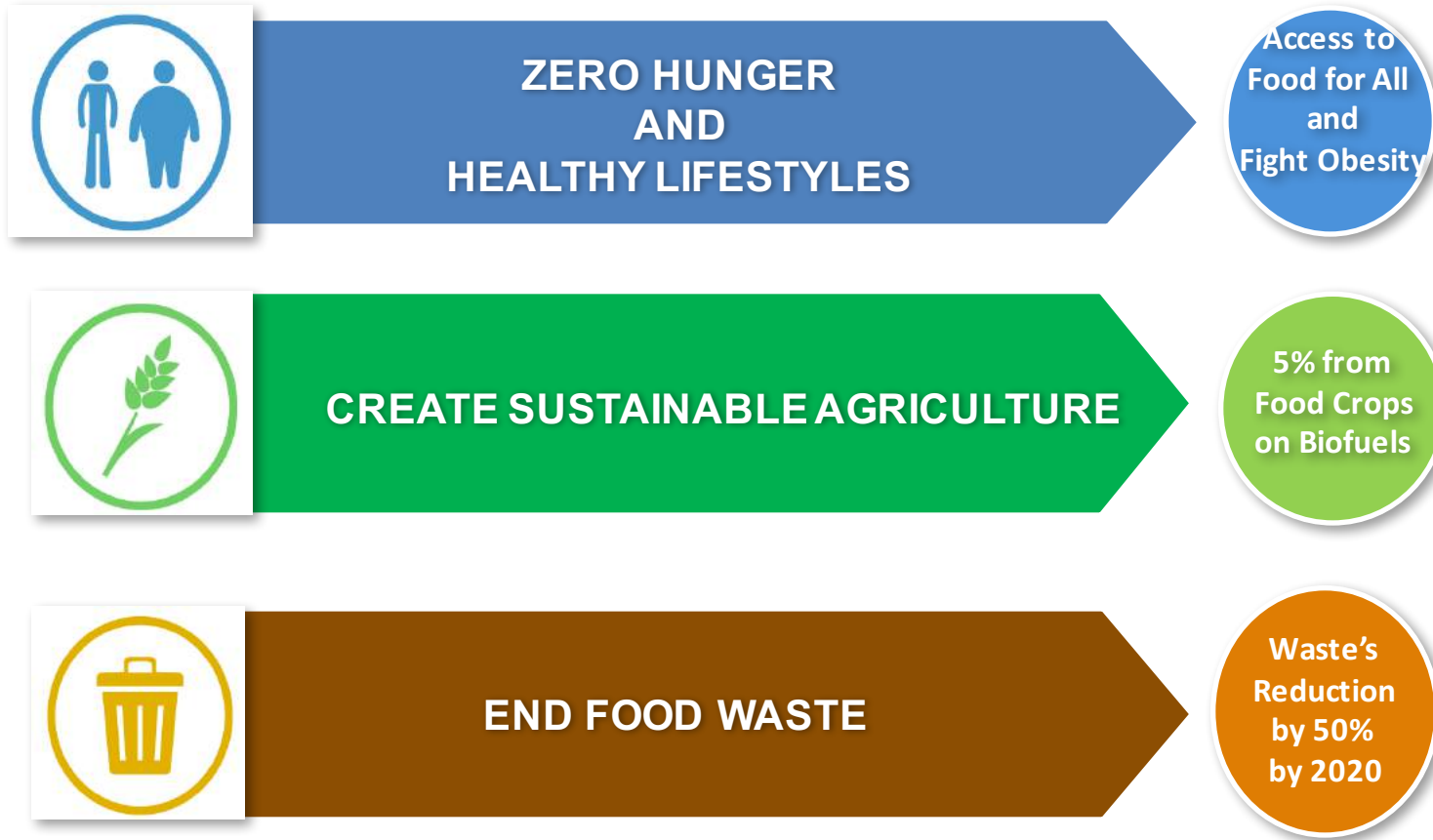
**Developed with the Department of
Experimental Medicine of the
«Federico II» University of Naples**



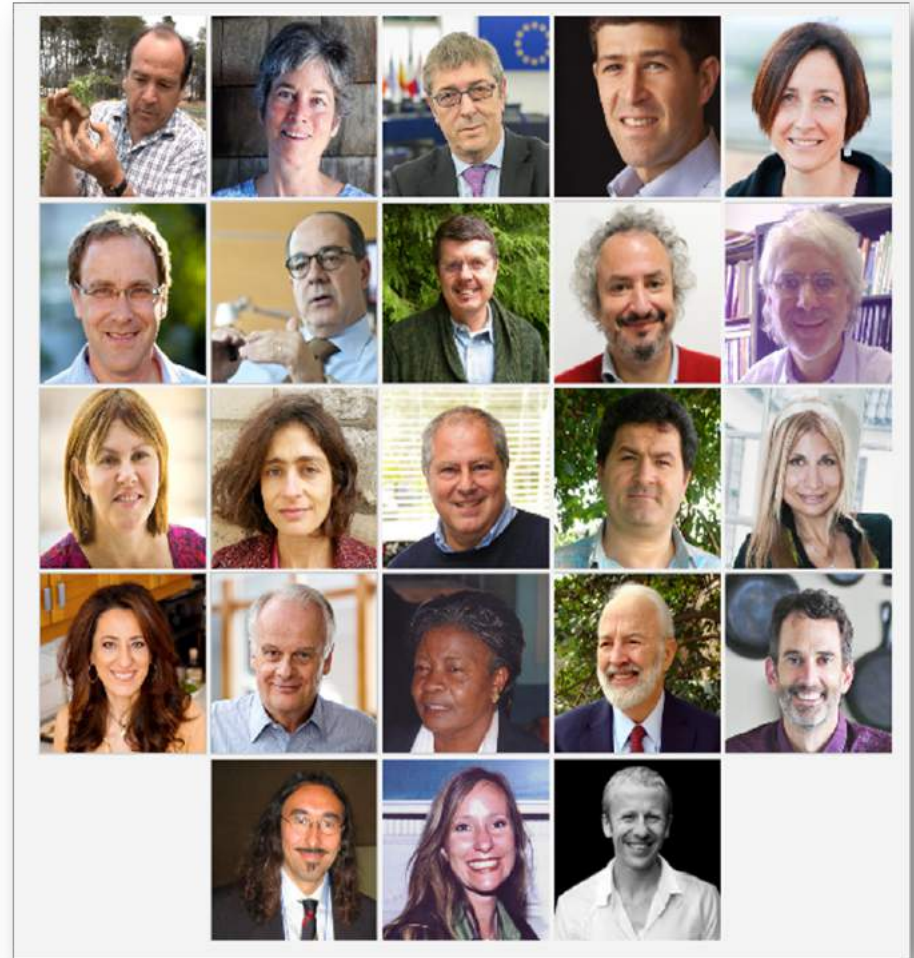
Example: Barilla Canteen of Pedrignano PR



#MILANPROTOCOL - OBJECTIVES



#MILAN PROTOCOL: A SHARED OWNERSHIP



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